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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,844	08/29/2003	Joseph L. Mitchell	905-282 (185840) (IR3710)	2815
23122	7590	02/22/2007	EXAMINER	
RATNERPRESTIA			KOCH, GEORGE R	
P O BOX 980			ART UNIT	
VALLEY FORGE, PA 19482-0980			PAPER NUMBER	
			1734	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.		Applicant(s)	
	10/652,844		MITCHELL, JOSEPH L.	
	Examiner		Art Unit	
	George R. Koch III		1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 19-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 23-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/13/2006 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 6, 8-11 and 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Luy (US 5,766,557).

Luy discloses an apparatus (see Figures) for coating an article by immersion of the article in a fluidized powder, the apparatus comprising: a container (item 3) defining

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an interior (item 28) and a plate (item 21) separating the interior into a coating chamber and a plenum (item 28a, called a "fluidizing and processing space", see column 4, lines 51-60), the plate perforated by a plurality of pores (i.e., the perforations) to provide for passage of a gas from the plenum to the coating chamber (see column 4, line 61 to column 5, line 4); a gas supply system (items 121, 122, 123, 124, 125, 126, 127, 128 and 131) connected to the plenum of the container for delivery of a gas (compressed air - see column 8, line 56 to column 9, line 9) to the plenum in a sufficient quantity to suspend a powdered material in the coating chamber in a fluidized volume; the gas supply system having a primary fluidizing portion as claimed and a controllable pulsating portion including a valve (items 125 and 128), the valve having opened and closed conditions to provide for intermittent delivery of gas to the plenum and a corresponding variation in the fluidized powder volume; and a controller (item 131) connected to the valve for controlling actuation of the valve between its opened and closed conditions. This valve structure allows the apparatus to function as claimed.

As to claim 2, Luy discloses that the gas provided is compressed air (see column 8, lines 61-64).

As to claim 6, Luy discloses that the gas supply system includes a pressure regulator (pressure sensor 126 and associated elements - see columns 8-9) for controlling the pressure of the compressed air delivered to the plenum.

As to claim 8, Luy discloses an apparatus (see Figures, and citations applied to claim 1 above) for coating an article by immersion of the article in a powdered material suspended in a fluidized condition, the apparatus comprising: a container (item 3)

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defining an interior (item 28) and including a divider (perforated plate 21) extending across the interior to separate the interior into an upper coating chamber and a lower plenum, the divider perforated by a plurality of pores (perforations) for passage of a gas from the plenum (item 28b) to the coating chamber; a gas supply system (items 121-128 and 131) including first and second portions each connected to the plenum, the first portion capable of a substantially continuous delivery of a gas in a sufficient quantity for suspension of a powdered material in the coating chamber in a fluidized volume, the second portion (such as the additional inlets) of the gas supply system providing a controllable supply of gas capable of delivery of discontinuous pulses, the pulses capable of supplementing the fluidizing gas delivered by the first portion.

As to claim 9, Luy discloses that the gas provided is compressed air (see column 8, lines 61-64).

As to claim 10, the control system of Luy is capable of cyclically controlling the compressed air pulses delivered to the plenum.

As to claim 11, Luy discloses that the gas supply system includes a pressure regulator (pressure sensor 126 and associated elements - see columns 8-9) for controlling the pressure of the compressed air delivered to the plenum.

As to claim 23, the apparatus of Luy is capable of delivering the claimed quantity of gas.

As to claims 24 and 25, the apparatus of Luy is capable of being set to use the method of the claimed pulse length.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 2 and 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Gillette (US 5,242,718) and Luy (US 5,766,557).

Gillette discloses an apparatus (see Figures) for coating an article by immersion of the article in a fluidized powder, the apparatus comprising: a container (Figure 1) defining an interior (item 28) and a plate (item 24) separating the interior into a coating chamber and a plenum (item 18, column 3, line 65), the plate perforated by a plurality of pores (i.e., porous) to provide for passage of a gas from the plenum to the coating chamber (see column 4 to column 6); a gas supply system (items 146 - see column 5) connected to the plenum of the container for delivery of a gas (capable of being compressed air) to the plenum in a sufficient quantity to suspend a powdered material in

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the coating chamber in a fluidized volume (see column 5, lines 46-60); the gas supply system comprising a controllable supply portion comprising a valve (column 5, lines 42-45). A valve inherently has opened and closed conditions, and therefore is capable of providing for intermittent delivery, or enabling and disabling delivery of a controllable supply of gas; and a controller (item column 4, lines 42-45) connected to the valve for controlling actuation of the valve between its opened and closed conditions, and therefore capable of the cyclical pulses.

Gillette only discloses a single air source.

Luy discloses a similar apparatus which includes a gas supply system (items 121, 122, 123, 124, 125, 126, 127, 128 and 131) connected to the plenum of the container for delivery of a gas (compressed air - see column 8, line 56 to column 9, line 9) to the plenum in a sufficient quantity to suspend a powdered material in the coating chamber in a fluidized volume; the gas supply system having a primary fluidizing portion as claimed and a controllable pulsating portion including a valve (items 125 and 128), the valve having opened and closed conditions to provide for intermittent delivery of gas to the plenum and a corresponding variation in the fluidized powder volume; and a controller (item 131) connected to the valve for controlling actuation of the valve between its opened and closed conditions. This valve structure allows the apparatus to function as claimed. One in the art would appreciate that such extra air sources would permit finer control of the air in the chamber. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such air sources in order to achieve finer control of the air in the chamber.

As to claim 2, Gillette discloses an air supply source (item 146) which is capable of supplying compressed air.

As to claim 23, the apparatus of Gillette is capable of delivering the claimed quantity of gas.

As to claims 24 and 25, the apparatus Gillette is capable of being set to use the method of the claimed pulse length.

7. Claims 2, 3, 6, 8-14 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gillette and Luy as applied to claims 1 and 2 above, and further in view of Blakeslee (US Patent 3,918,401).

As to claim 2, Gillette discloses an air supply source, but is silent as to whether the air is compressed. Blakeslee discloses an air supply source for fluidizing powder, and discloses that the air is pressurized (see column 3-5). Blakeslee further discloses that it is beneficial to use two streams of compressed air, in order to achieve a wide range of coatings (column 3, lines 47-58) and optimum results. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have included the compressed air in order to achieve optimum results of various thicknesses.

As to claim 3, Gillette does not disclose timers or solenoid valves. However, Blakeslee discloses that the air is distributed through a plurality of solenoids (see column 3, as cited above) and that the feed of the air is controlled by a timer (see Figure). One in the art would appreciate that such timers and solenoid valves ensure efficient fluidization of the powder as in Blakeslee. Therefore, it would have been

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obvious to one of ordinary skill in the art at the time of the invention to have included the timers and solenoid valves in order to achieve optimum results of various thicknesses.

As to claim 6, Blakeslee discloses utilizing a pair of pressure regulators (items 15 and 17) for controlling the compressed air.

As to claim 8, Gillette discloses an apparatus (see Figures and rejection of claim 1 above) for coating an article by immersion of the article in a fluidized powder, the apparatus comprising: a container (Figure 1) defining an interior (item 28) and a divider (item 24) separating the interior into a coating chamber and a plenum (item 18, column 3, line 65), the divider perforated by a plurality of pores (i.e., porous) to provide for passage of a gas from the plenum to the coating chamber (see column 4 to column 6); a gas supply system (items 146 - see column 5) connected to the plenum of the container for delivery of a gas (capable of being compressed air) to the plenum in a sufficient quantity to suspend a powdered material in the coating chamber in a fluidized volume (see column 5, lines 46-60).

Gillette does not disclose that the gas supply system includes second portions, or that the second portion provides a controllable supply of gas capable of delivery of discontinuous pulses, the pulses supplementing the fluidizing gas delivered by the first portion.

Blakeslee discloses a similar gas supply system includes first and second portions, and that the second portion provides a controllable supply of gas capable of delivery of discontinuous pulses, the pulses supplementing the fluidizing gas delivered

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by the first portion (via items 15, 17, 19 and 21). Blakeslee further discloses that it is beneficial to use two streams of compressed air, in order to achieve a wide range of coatings (column 3, lines 47-58) and optimum results. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have included the compressed air in order to achieve optimum results of various thicknesses.

As to claim 9, Gillette discloses an air supply source (item 146) which is capable of supplying compressed air. Furthermore, while Gillette discloses an air supply source, but is silent as to whether the air is compressed. In any event, Blakeslee discloses an air supply source for fluidizing powder, and discloses that the air is pressurized (see column 3-5). Blakeslee further discloses that it is beneficial to use two streams of compressed air, in order to achieve a wide range of coatings (column 3, lines 47-58) and optimum results. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have included the compressed air in order to achieve optimum results of various thicknesses.

As to claim 10, Gillette discloses control devices for controlling the air supply (see column 5, lines 36-60). Additionally, Blakeslee as incorporated discloses a timer (see Figure) which cyclically controls the valves (items 19, 21, and see columns 3-6).

As to claim 11, Blakeslee as incorporated discloses utilizing a pair of pressure regulators (items 15 and 17) for controlling the compressed air, including controlling the pressure of the air pulses.

As to claim 12, Blakeslee discloses solenoid valve in the second portion of the gas supply system (items 19, 21).

As to claim 13, Blakeslee as incorporated discloses a timer (see Figure) which cyclically controls the solenoid valves (items 19, 21, and see columns 3-6) to variable actuation.

As to claim 14, Blakeslee as incorporated discloses controlling the duration and frequency of the compressed air pulses to provide multiple modes of operation. Blakeslee further discloses that it is beneficial to use variations in the compressed air, in order to achieve a wide range of coatings (column 3, lines 47-58) and optimum results. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have included the multiple modes in order to achieve optimum results of various thicknesses. Such multiple modes would also promote variation in the fluidized volume and powder mixing.

As to claim 23, the apparatus of Gillette is capable of delivering the claimed quantity of gas.

As to claims 24 and 25, the apparatus of Gillette is capable of being set to use the method of the claimed pulse length.

8. Claims 4, 5 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gillette, Luy and Blakeslee as applied to claims 2 and 3 above, and further in view of Ganiaris (US patent 3,888,423).

As to claims 4 and 17, Blakeslee as incorporated into Gillette includes two streams of compressed air, one for fluidizing and the other for pulsing. However, Blakeslee is silent as to using a blower for the fluidizing source.

Ganiaris discloses it is known to use a blower (item 11) in conjunction with a fluidizing bed apparatus. One in the art would appreciate that the blower is functionally equivalent to the fluidizing air set to a constant pressure (and further, Blakeslee discloses that it is most convenient to have the fluidizing air set to constant - see column 3, lines 50-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have replaced the compressed air source for the fluidizing air with a blower in order to achieve constant air flow.

As to claim 5 and 18, official notice is taken that check valves are well known and conventional in fluid flow operations. One in the art would appreciate that check valves prevent backflow of the fluidized powder and increase operational safety. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such check valves in order to ensure operational safety.

9. Claims 7, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gillette, Luy and Blakeslee as applied to claim 6 and 12 above, and further in view of Gimben (US Patent 5,454,256).

As to claim 7, 15 and 16, Gillette and Blakeslee do not disclose the use of limit switches.

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Gimben discloses using limit switches to monitor various components of a fluidizing powder coating system also utilizing timers and solenoids as in Gillette and Blakeslee. Gimben discloses that these switches monitor the condition of various functions. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such switches in order to control the various functions.

Response to Arguments

10. Applicant's arguments filed 11/13/06 have been fully considered but they are not persuasive.

11. In response to applicant's argument that the prior art does not disclose the claimed pulsing and immersion techniques, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

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Conclusion

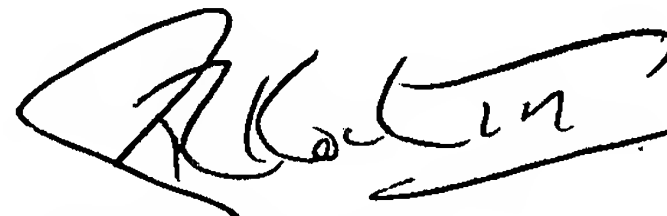
Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and

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giving the operator the above TDD number. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



George R. Koch III
Primary Examiner
Art Unit 1734

GRK
2/20/2007